

Application No. 10/598,877

Amendment Dated 12/7/2009

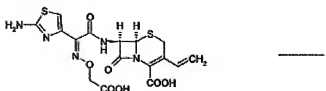
Reply to Office Action of 10/07/2009

# **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

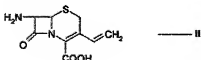
## **Listing of Claims:**

1. (Original): A process for preparing cefixime of formula I:

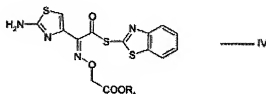


which comprises,

- a) reacting 7-amino-3-vinyl-3-phenyl-4-carboxylic acid of formula III:



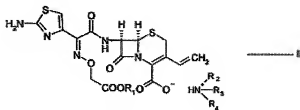
with a thiazolyl acetic acid derivative of formula IV:



wherein R1 represents lower alkyl in a mixture of water and non-protic water miscible solvent in the presence of a base of formula V:



wherein R2, R3 and R4 independently of each other represents hydrogen, alkyl, cycloalkyl, alkylaryl, aryl or aralkyl to obtain a reaction mass comprising the compound of formula II:



wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are as defined above;

b) extracting the reaction mass of step (a) with ethyl acetate or methylene dichloride and separating the aqueous layer;

c) hydrolyzing the salt of formula II present in the separated aqueous layer using an aqueous alkali metal hydroxide solution at about 0 - 15°C;

d) adding an acid immediately after completion of hydrolysis reaction to adjust the pH to about 4.5 to 8.0; and

e) crystallizing cefixime of formula I by adjusting the pH of the resulting solution of step(d) to about 2.0 to 3.5 with an acid and cooling if required.

2. (Original): The process according to claim 1, wherein the reaction in step (a) is carried out at below about 15°C.

3. (Currently Amended): The process according to claim 2, wherein the reaction in step (a) is carried out at about 0 - 10°C.

4. (Original): The process according to claim 1, wherein the non-protic water miscible solvent is selected from tetrahydrofuran, acetone, dimethylsulfoxide and a mixture thereof.

5. (Original): The process according to claim 4, wherein the non-protic water miscible solvent is tetrahydrofuran.

6. (Original): The process according to claim 1, wherein R2, R3 and R4 of formula V independently of each other represent hydrogen, alkyl or cycloalkyl.
7. (Original): The process according to claim 1, wherein the base is selected from triethylamine, trimethylamine, tributylamine and n-butylamine.
8. (Original): The process according to claim 1, wherein the quantity of the base of formula V used is at least about 1 mole per mole of compound of formula III.
9. (Original): The process according to claim 8, wherein the quantity of the base of formula V used is about 1 to 1.4 moles per mole of compound of formula III.
10. (Original): The process according to claim 1, wherein the solvent used in step (b) is ethyl acetate.
11. (Original): The process according to claim 1, wherein the hydrolysis reaction in step (c) is carried out at about 0 - 10°C.
12. (Original): The process according to claim 1, wherein the alkali metal hydroxide is sodium hydroxide or potassium hydroxide.
13. (Original): The process according to claim 1, wherein the quantity of alkali metal hydroxide is at least about 2 moles per mole of the compound of formula III.
14. (Original): The process according to claim 13, wherein the quantity of alkali metal hydroxide is about 2.5 to 4.0 moles per mole of the compound of formula III.
15. (Original): The process according to claim 14, wherein the quantity of alkali metal hydroxide is about 2.8 to 3.5 moles per mole of the compound of formula III.

16. (Original): The process according to claim 1, wherein the pH of the reaction mass in step (d) is adjusted to about 4.5 to 6.0 with an acid.

17. (Original): The process according to claim 1, wherein the acid used in step (d) is selected from aqueous hydrochloric acid, aqueous sulfuric acid and aqueous phosphoric acid.

18. (Currently Amended): The process according to claim 17, wherein the acid in step (d) is aqueous hydrochloric acid.

19. (Original): The process according to claim 1, wherein the acid in step (e) is selected from aqueous hydrochloric acid and aqueous sulfuric acid.

20. (Currently Amended): The process according to claim 19, wherein the acid in step (e) is aqueous hydrochloric acid.

21. (Currently Amended): The process according to claim 1, wherein the cefixime which is crystallized in step (e) is a cefixime trihydrate of formula Ia:

